

Applicant: Robert S. Howland
Appl. No.: 10/698,087
Examiner: Eduardo C. Robert
Docket No.: 703716.4001

Remarks/Arguments

Reconsideration of this application is requested.

By the present amendment, Claims 5 – 6 and 12 – 14 have been amended to more precisely define a spinal fixation system of the present invention. These claims are particularly directed to the preferred embodiment of Figures 16 through 19 as discussed beginning at line 3 on page 31 of the present specification. The anchor screw assembly is modified from previous embodiments as well as that shown in Applicant's Patent No. 5,649,926 to provide an important multi-axial or selective axial assembly. The key structural features are the provision of a cylindrical body for the swing bolt 14' as shown in Fig. 17e with a spherical shoulder 28' on the top portion as best seen in Figure 17a and a mating spherical seat 55' in the lower clamp 52' as best seen in Figures 18a and 18d. This structure allows the shoulder or upper portion 28' to freely rotate and pivot in the seat 55' of the lower clamp 52' and the bolt 14' to freely rotate in bores 54' and 74' within both the lower clamp 52' and upper clamp 72' thereby allowing any compound angle to be achieved between the screw 12' and a rod 86 (Fig. 1) disposed in the cylindrical passageway 64' (Fig. 3A) defined between the lower 52' and upper 72' clamps. There is no corresponding or similar structure in Howland 5,649,926. As will be apparent from Figures 16 through 19, the upper and lower clamps 72' and 52' are freely rotatable on a swing bolt 14' and can be locked in place by fastener 18' after suitable adjustment of the upper and lower clamps. Furthermore, because of the spherical seat and shoulder, the upper and lower clamps can be positioned multi-axially.

It is respectfully submitted that the present claims are neither anticipated by nor obvious in view of Howland '926. Howland does not have a swing bolt as defined, upper and lower clamps, the lower clamp having a bottom spherical seat at the edge of the cylindrical opening as defined. The upper and lower portions noted by the Examiner as item 10 in Fig. 1 merely comprises a single axis anchor screw as

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disclosed in earlier Howland patents, and it is entirely different from that claimed herein. The Examiner contends that there is a spherical shoulder 26, but it is entirely obvious in looking at Figs. 3 and 4 of Howland '926, that the ears 26 in no way comprise a "spherical shoulder."

The Examiner's view and evaluation of the head portion of the anchor screw 22 of Howland '926 is incorrect. The head portion 24 has a upper area 26 with machined flat surfaces on the two tapered sides and a cylindrical radius at the top end. It is not spherical. The bolt 50 does not rotate in the anchor screw assembly 22, and it can only pivot on its axis 28 provided by hinge pin 29 up to 180° on the lineal access of the assembly. Only the threads in spindle 12 will rotate 360° on the threads 52 of the swing bolt 50. Furthermore, there is no spherical seat in the bottom of spindle 12, and they are not designed to mate together as is apparent from the various Figures of Howland '926.

The Examiner's comments on page 4 that Howland '926 has a spherical seat on the lower clamp portion is entirely incorrect, and there is no spherical seat shown in Fig. 7. A spherical seat and spherical shoulder of the present invention are crucial to the multi-axial assembly.

As to the Examiner's Section 103 rejection of Claim 13, it is submitted that the spacer as currently defined in Claim 13 is completely different from anything shown in the Fiz patent. The spacer 5 of Fiz extends between rods attached to screws on opposite sides of vertebrae; whereas, the spacer defined in Claim 13 extends between the first and second anchor screw assemblies and has a length substantially the same as the length of the exposed portion of the elongate member. Thus, the spacer is disposed on the elongate member between screw assemblies for preventing the first and second anchor screw assemblies from moving substantially toward one another.

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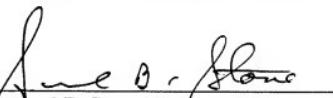
In view of the foregoing, favorable reconsideration is requested.

A Notice of Allowance is solicited.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 150665.

Respectfully submitted,
ORRICK, HERRINGTON & SUTCLIFFE LLP

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